



8500 Bethel Road  
Shawnee, OK 74804

FLOODPLAIN ANALYSIS  
PRAIRIE CREEK @ CEDAR LANE ROAD

The owner of a 160 acre parcel of land located in Section 18, Township 8 North, Range 1 East, IM is attempting to subdivide a portion located east of Prairie Creek. A portion of this parcel is located within a Zone A area. The only access to this parcel is from Cedar Lane Road. A majority of this access is located west of Prairie Creek with a relatively small portion of access located east of Prairie Creek. To get access to the proposed subdivided portion would require crossing Prairie Creek from the east or a road entering in the small access point east of Prairie Creek. The former would require crossing the floodplain while the later would require only locating a road within the floodplain and, therefore, would be less impact on said floodplain.

To determine the actual Base Flood Elevation (BFE) for this area, cross sections of Prairie Creek were taken and a HEC-RAS model was generated. Flows were determined with the use of StreamStats report (Exhibit A), which is model generated by the USGS using regression equations. These equations are frequently used in conjunction with a normal depth analysis and/or a HEC-RAS analysis to determine BFE's in Zone A areas.

The results of this analysis is attached (Exhibit B) and indicate a 100-year BFE of 1044.8 at Cedar Lane. The lowest elevation of Cedar Lane along this corridor is 1041.5 which indicates Cedar Lane would be inundated. Along with the 100 year elevations, the 2, 5, 10, 25, and 50 year elevations were determined. Even the 2-year elevation was determine to be 1042.9 which also would inundate Cedar Lane.

A proposed plan/profile has been generated for the proposed road (Nico Drive). The access road is proposed to be along the east border of the property and is designed so that a large portion of the road thru the floodplain is below the elevation of the low portion of Cedar Lane. With this proposed design subsequent HEC-RAS analysis (Exhibit D) was performed and indicated there would NO increase in the BFE as a result of the construction.

The road would also cross a tributary to Prairie Creek so structure/s are proposed for this crossing. Since the 2-year flood completely inundates Cedar Lane and the proposed road, the structures were designed to pass the 2-year flows based on the StreamStats report for the tributary (Exhibit C) as any larger flows would be irrelevant since the whole area would be inundated.

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